**MCA Practice Problems Worksheet #3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

(algebra) Name

**1**. **Simplify 3x + 2(x – 5)**

a. x – 10 b. 5x + 10 c. 5x – 10 d. 5x – 5

**2.** **Solve the equation 5x + 2 = x + 7**

a.  b.  c.  d. 

**3. If 2x – 4(3 – x) = 18 then *x* = ?**

a. – 15 b. – 3 c. 1 d. 5

**4. What are the zeros of the function: y = x2 – x – 6 ?**

a. – 2 and 3 b.  and  c. 3 and – 5 d. there are no zeroes

**5. Which point is a solution of the linear system: y = – 2x – 8 and y = x + **

a. (– 3, – 2) b. (– 1, – 6) c. (3, 7) d. (21, – 50)

**6. The volume of a right circular cylinder is V = πr2h. What is the approximate volume of this right circular cylinder?**

6.5 m

8.0m

a. 265.5 m3 b. 326.7 m3 c. 1036.9 m3 d. 1061.9 m3

**7. Katie is simplifying this expression: 2(5a + 3b – c) – 5(4a – 2b – 3c). Which of the following expressions is equivalent?**

a. -10a + 16b + 13c b. -10a – 4b – 4c c. 30a + b + 2c d. 30a – 4b – 17c

**8. Solve this equation: 3 – 2x = 17**

a. x = 7 b. x = -10 c. x = -7 d. x = 10

**9. Solve this equation: x2 – 6x + 5 = 0**

a. x = -1, -5 b. x = 1, 5 c. x = 2, 3 d. x = -2, -3

**10. Solve this system of equations: y = 4x – 8 and y – 2x = 0**

a. (**–** 4, **–** 8) b. (1, 2) c. (**–** 1, **–** 2) d. (4, 8)

**11. Ralph has borrowed $600 for 2 years at a rate of 5%. Use formula I = Prt to find the total amount of interest he will pay.**

a. $6000 b. $60 c. $660 d. $30

**12. Solve this inequality: – 3x + 6 < – 21**

a. x > 9 b. x < 5 c. x < 9 d. x > 5

**13. Solve this equation: 3(x – 4) = 2(6x + 3)**

a. x =  b. x =  c. x = –2 d. x = 

**14. The volume of a cylinder is given by V = πr2h, where r is the radius of the base and h is the height of the cylinder. Find the height of a cylinder that has a volume of 810π square feet and a radius of 9 feet.**

a. 100 feet b. 10**π** feet c. 90 feet d. 10 feet

**15. Simplify: 3 + 3(4 + 5)3**

a. 4374 b. 149 c. 2190 d. 19, 686

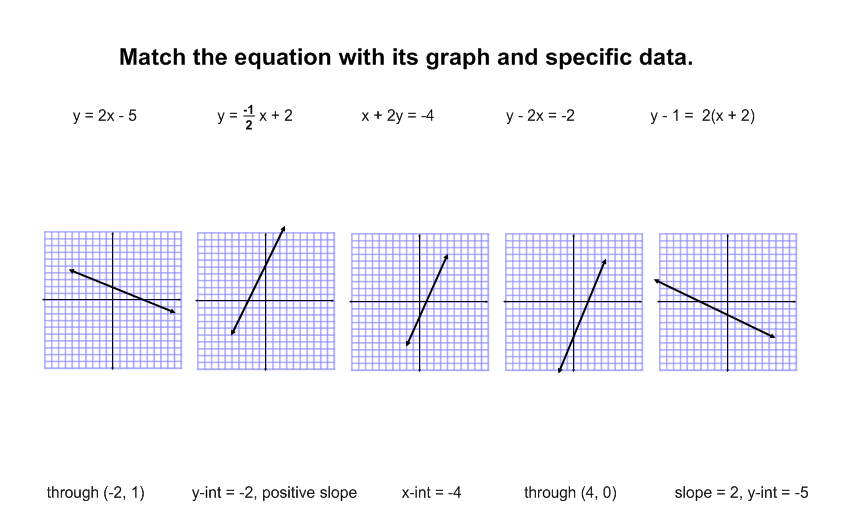
**16. Simplify 7\*7 + 15 – 6 + 2**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | 50 | b. | 61 | c. | 53.5 | d. | 60 |

**17. What is the value of  when a = 3 and b = –4?**

a.  b.  c.  d. 1

**18.**



A

B

D

C

E

**MCA Practice Problems Worksheet #4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

(algebra) Name

FIND THE EQUATIONS OF THE FOLLOWING LINES IN PROBLEMS 1 - 5

**1. slope = 4, y-intercept = 3**

a. y = 3x + 4 b. y = 4x – 3 c. y = (4/3)x d. y = 4x + 3

**2. slope = through (2, 6)**

a. y = x + 5 b. y = x + 6 c. y = 5x +  d. y = 2x + 6

**3. Parallel to y = –5x + 8 and a y-intercept of –2**

a. y = –2x + 8 b. y = –5x – 2 c. y = x – 2 d. y = 8x – 2

**4. slope = -4, y-intercept = 0**

a. y = -4 b. y = -4x c. y – 4 = x d. y = x – 4

**5. Perpendicular to 2x – 3y = 12 and through (4, -5)**

a. y = x – 11 b. y = x – 5 c. y = x – 5 d. y = x + 1

**6. Robert is simplifying the expression 2(a + 2b + 3c) + 4(a – 3b + 2c). Which of the following is equivalent**?

a. 6a + 4b + 6c b. 6a + 16b + 14c c. 6a – 8b + 14c d. 12abc

**7. Find the x-intercept of 3x - 5y = 15**

a. x = 3 b. x = -3 c. x = 5 d. x = -5

**8. Find the slope of the line through (-2, 2) and (7, -3).**

a. -5/9 b. -1/5 c. -9/5 d. 3/5

**9. I can rent a truck for a flat rate of $30 plus $12 per hour. Which equation represents the cost of the truck over *h* hours?**

a. C = 30h + 12 b. C = 30 + 12h

c. C = 30(12)h d. C = (30 + 12)h

**10. For the exponential equation y = 5 \* which is true ?**

a. y-intercept = 5; decay b. y-intercept = 1/3 ; decay

c. y-intercept = 1/3 ; growth d. y-intercept = 5 ; growth

**11. What is the equation represented by this data ?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x | 1 | 3 | 5 | 7 |
| y | 5 | 1 | -3 | -7 |

a. y = 3x + 2 b. y = -5x + 10 c. y = 4x + 1 d. y = 7 – 2x

**12. What is the complete factored form of 5m2n – 10mn + 15mn2?**

a. 5mn(5m2n – 10mn + 15mn2) b. 5mn(m – 2 + 3n) c. 5m2n(–10mn + 15m2n) d. 5(m2n – 2mn + 3mn2)

**13. Simplify 3(g + 2h) – 2(3g – 4h) + 5(–2g + h)**

a. 0 b. –13g + 3h c. 7g + 19h d. –13g + 19h

**14. Solve –18 = 12 – 3x**

a. x = 2 b. x = –2 c. x = 10 d. x = –10

**15. Four students have tried to solve the equation 3x + 5 = 4 + 2(x + 6). Which is correct?**

a. x = 11 b. x = 21 c. x = 5 d. x = 16/5

**16. Solve x2 – 4 = 0.**

a. x = 4 b. x = 2 or x = –2 c. x = 2 d. x = 4 or x = –4

**17. Solve x2 + 7x = –6**

a. x = 1, x = 6 b. x = 7, x = 6 c. x = –1, x = –6 d. x = –1, x = 6

**18. Solve m2 – 5m – 14 = 0 for m**

a. the solutions are 7 and –2 b. the solutions are –7 and 2 c. the solutions are 0 and –14 d. there are no solutions

**19. Solve the system of equations: y = 3x**

**y = –4x – 7**

a. (1, 3) b. (2, –15) c. (–3, –1) d. (–1, –3)

**20.** **Solve the system of equations: 2x + 3y = 16**

**4x – 3y = 14**

a. (5, –2) b. (2, 5) c. (5, 2) d. (–5, 2)

**21. Solve the following inequality: 3(x – 2) < –9**

a. x > –1 b. x < –5 c. x > –5 d. x < –1

**22. Solve the following inequality: 4x + 7 ≥ 2 + 3(x – 1)**

a. x ≥ –8 b. x ≥ 2 c. x ≤ –8 d. x ≥ 6

**23. The volume of a sphere is given by the formula V =  πr3, where r is the radius of the sphere. Find the approximate volume of a sphere with a diameter of 10 meters, using 3.14 for pi.**

a. 4190 m3 b. 60 m3 c. 520 m3 d. 290 m3